

REMARKS/ARGUMENTS

Title, Specification, and Drawings

The title is changed in accordance with the office action to “Improved Laser Guarded Industrial Press Safety System.”

The drawings have been objected to on the basis that the “only the laser emitting means is adjustable must be shown” (Office Action, page 2, para. 1). New Figure 9B schematically shows only the laser emitting means being adjustable, which is supported by as-filed claim 19 and in the specification, for example, in the paragraph bridging pages 6 and 7. The label of as-filed Figure 9 is amended to be Figure 9B, and a “control means 55” is added as a schematic to Figures 9A and 9B for clarity. Each of the drawing amendments are fully supported by the specification and do not add new matter.

The specification is amended to make it consistent with the figures. The references to “Figure 9” is changed to “Figure 9A”; a brief description of new Figure 9B is added at page 7, line 27; and text added to page 13 adds a reference to new Figure 9B and to control means 55.

Claims

Claims 11, 14, and 17 are amended in accordance with the office action to overcome objections thereto. Claim 20 is amended to overcome the Section 112 rejection.

Claims 1-11 and 19-21 have been rejected under Section 103 based on PCT Publication WO 97/25568 (Appleyard & Davies) in view of United States Patent Number 4,170,417 (Tourres). Claims 12-18 have been rejected under Section 103 based on Appleyard & Davies in view of Tourres and further in view of United States Patent Number 4,249,074 (Zettler). Applicant requests reconsideration of the pending rejection.

The office action cites Tourres for teaching “a laser emitting means for emitting a continuous planar laser beam having a constant lateral width for object detection.” (Office Action, page 4). Applicants submit that the pending claims are allowable over Appleyard & Davies in view of Tourres or any other reference because, *inter alia*, Tourres in non-analogous art and, even if one were to consider Tourres, there is no teaching or incentive to modify Appleyard & Davies in view of Tourres.

Tourres is Non-Analogous Art

Applicant's claim 1 recites, inter alia, a "safety system for an industrial press . . . comprising: a laser that emits a continuous planar laser beam having a generally constant lateral width; a light receiver . . . ; and a control . . . that is capable of stopping or preventing a movement of the moveable section of the press when the light receiver detects that the laser beam has intersected an object." Accordingly, Applicant's field of endeavor is safety systems employing lasers, which is apparent upon considering Applicant's stated objects to overcome the disadvantages of the prior art safety systems employing one or more discrete beams. The disadvantages include, first, the possibility of an object bypassing or passing between the light beam(s) and/or, second, delays between the breaking of a light beam and actuation of the safety system caused by software filtering to minimize the effect of vibration:

Firstly, because all of the above arrangements rely on one or a series of parallel IR or laser beams to provide a barrier, there is always the possibility of the safety light curtain being inadvertently bypassed by an object passing the light beams or passing between adjacent parallel light beams and not breaking any of the light beams. The single light beam or safety light curtain is therefore ineffectual under these circumstances.

Also, in the case of arrangements using laser beams, vibrations can seriously distort the path of the laser beam causing disruptions and inaccuracies in the operation of such arrangements. Although the use of software "filtering" or compensation can be used to minimize the effect on vibrations as for example shown in International Application No. PCT/AU9700005, this results in an increase in the delay between the breaking of the light beam and the subsequent actuation of the safety system to stop the press. Such delays should preferably be minimized as far as possible, and preferably eliminated. (Application, page 2, para. 3 & 4).

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.: M.P.E.P. § 21410.1(a) (citations omitted). In contrast to Applicant's "safety system" comprising a planar laser beam, Tourres discloses a device for *measuring the profile of a moving body* wherein three expanded planar laser are relatively disposed at angles of 45 degrees. Tourres's Figure 3 shows three discrete photodetector cells 14, 15, and 16 in a horizontal configuration: one cell for each planar laser beam.

Accordingly, Tourres is not analogous art because it neither is in the field of Applicants endeavor nor reasonably pertinent to the particular problem with which Applicant was concerned. In this regard, Tourres is in the field of measuring, rather than safety systems. Further, Tourres's measurement system (employing planar laser beams each with a single, moveable detector) should not be considered pertinent, without hindsight, to a person concerned (for example) with eliminating the possibility of bypassing laser beams and/or with minimizing the effects of vibration.

Lack of Motivation to Combine

Even considering, *arguendo*, the disclosure of Torres, there is no incentive to modify Appleyard & Davies according to the teaching of Tourres. The office action apparently suggests that the motivation to somehow provide the laser emitting means of Tourres in the apparatus of Appleyard & Davies would be "to reduce the number of laser emitting sources and save cost." (Office Action, page 4). The present invention is for providing a safe environment, which is a critical aspect of manufacturing and requires a special consideration beyond that of cost. The costs savings (if any) of the claimed invention over (for example) Appleyard & Davies is immaterial to the goals of safety.

In this regard, Appleyard & Davies discloses a safety apparatus and method for protecting an object entering into the path of a moving base in a press brake. The system of Appleyard & Davies is left with gaps between the beams that could lead to a failure of the safety system, which drawback is not addressed in the disclose of Appleyard & Davies.

Tourres generally discloses three parallel beams and corresponding single cells for measuring the diameter of an object (such as a bottle moving on a conveyor belt) "practically makes sure that no defect will be undetected." (Tourres, col. 3, lines 4-9). Tourres neither teaches nor suggests any aspect of the problems associated with a gap. The measurement and statistical focus of Tourres, as compared to the critical nature of a safety system as claimed, would ensure that a person skilled in the art would not look to Tourres to modify Appleyard & Davies.

Accordingly, neither Appleyard & Davies nor Tourres provide a motivation to modify the Appleyard & Davies reference, and the purported costs savings does not make up for the

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lack of motivation to combine, as the cost savings would be of little importance to a person concerned with worker safety.

Limitations Neither Taught Nor Suggested


The dependent claims recite limitations that are neither taught nor suggested by the prior art. For example, neither Appleyard & Davies nor Torres teach or suggest the capability of providing "the width of the planar laser beam is wider than the length of the light receiver array," as recited in Applicant's claim 16. Accordingly, Applicant submits, *inter alia*, that claim 16 is allowable.

CONCLUSION

Applicant submits that the claims are in condition for allowance and request favorable reconsideration of the pending rejection of the independent claim, as well as consideration of the limitations of the dependent claims, such as claim 16. The amendments herein overcome the claim objections and Section 112 rejections, and the objections to the title and drawings.

If the examiner determines that a telephone conversation would further the prosecution of this case, the examiner is invited to telephone the undersigned at his convenience.

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